

**ABSTRACT OF THE DISCLOSURE**

A shift control system for an automatic transmission wherein shifting from a first gear ratio to a second gear ratio is carried out by releasing the hydraulic pressure of a first friction engaging element for disengagement thereof and supplying the hydraulic pressure to a second friction engaging element for engagement thereof, the hydraulic pressure to the second friction engaging element being subjected to feedback control, wherein the shift control system includes a sensor for sensing a parameter on a vehicle cruising condition; and an ECU having a part for calculating, in accordance with the sensed parameter, a difference in output-side rotational speed of the fluid coupling before and after the shifting; and a part for setting, when the shifting is carried out with an output of the engine being smaller than a predetermined value, the second hydraulic pressure in accordance with the calculated difference immediately before start of the feedback control.